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EXAMINER	
DAGLAWI, AMAR A	

ART UNIT	PAPER NUMBER
2618	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/815,161	HANSEN, CHRISTOPHER J.	
	Examiner	Art Unit	
	AMAR DAGLAWI	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _01 October 2008_.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-29_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-29_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _31 March 2004_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments see pages 10-12, filed 10/01/2008, with respect to claims 1-10, and 11-25 have been fully considered and are persuasive. The previous action of 07/01/2008 has been withdrawn.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

    1. Determining the scope and contents of the prior art.
    2. Ascertaining the differences between the prior art and the claims at issue.
    3. Resolving the level of ordinary skill in the pertinent art.
    4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claim 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugar et al (US 6,714,605 B2) in view of McFarland et al (US 2003/0107512 A1).

4. With respect to claim 26, Sugar discloses a method in a radio transceiver comprising:

5. grouping a plurality of data entries (fig.11, Fig.12, Fig.6, col.10, lines 40-67, col.11, lines 5-67) ;

6. generating a first list of pulse repetition intervals having pulses with a pulse width within a specified range (col.10, lines 40-67, col.11, lines 5-67) ;

7. counting a number of most and second most common pulse intervals and determining whether a radar signal is present (col.12, lines 10-67, col.13, lines 1-67, col.14, lines 1-35, col.21, lines 45-60) [the sage 10 is used to classify and identify signals in a frequency band for radar systems] (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 67).

8. However, Sugar fails to teach if a radar signal is present inhibiting transmission of outgoing communication signals from a radio transceiver which is further taught in analogous art by McFarland (See Fig.1, par [0017-0018], par [0020-0022]).

9. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Sugar with the radar detection system that detects interfering radar signals as taught by McFarland so as to avoid transmitting when interfering radar signals are present.

10. With respect to claim 27, Sugar in view of McFarland further teaches including determining whether the number of the most common pulse interval values exceed a specified value (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 1-67).

11. With respect to claim 28, Sugar further teaches determining a radar signal is present an extra pulse (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines1- 67).

12. With respect to claim 29, Sugar in view of McFarland further teaches continuing to monitor for a radar even after a radar has been detected to determine whether transmissions may resume in overlapping frequency bands (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines1- 67) (col.21, lines 45-60) [the sage 10 is used to classify and identify signals in a frequency band for radar systems].

13. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over McGill et al (US 5,017,921) in view of Sugar et al (US 6,714,605 B2).

14. With respect to claim 1, McGill discloses a radio transceiver (Fig.1) comprising: radio front end for receiving, amplifying and down-converting and filtering a radio frequency (RF) signal to produce a low frequency received signal analog-to-digital converter (ADC) operatively coupled to receive the low frequency received signal, the ADC producing a digital low frequency signal baseband processor coupled to receive and process the digital low frequency signal (Fig.1).

15. However, fails to teach radar detection circuit coupled to receive the digital low frequency signal, wherein the radar detection circuit: detects incoming pulses and produces pulse data to a FIFO generates a table of pulse data for a series of pulses; evaluates the pulse data within the table to remove pulse data for pulses that do not satisfy specified radar pulse characteristics groups a plurality of pulse data within the table into groups of a specified size; performs radar detection processing; and wherein the baseband processor does not produce digital signals for transmission whenever a radar signal has been detected which is taught in the same field of endeavor by Sugar (Abstract, col.12, lines 10-67, col.13, lines 1-67, col.14, lines 1-35, col.21, lines 45-60)

[the sage 10 is used to classify and identify signals in a frequency band for radar systems] (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 67) (fig.11, Fig.12, Fig.6, col.10, lines 40-67, col.11, lines 5-67).

16. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of McGill (the wireless communication device) to incorporate the spectrum analyzer that contains the signal detector and peak detector as taught by Sugar so as to write a pulse event entry into a pulse event list if the pulse duration exceeds a pulse duration threshold value. Otherwise the pulse event entry is discarded.

17. With respect to claim 2, McGill in view of Sugar further teaches pulse data having a pulse width below minimum pulse width is removed from the table (Sugar, col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 67) (fig.11, Fig.12, Fig.6, col.10, lines 40-67, col.11, lines 5-67).

18. With respect to claim 3, McGill in view of Sugar further teaches pulse data having a pulse width above a maximum is removed from the table (Sugar, col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 67) (fig.11, Fig.12, Fig.6, col.10, lines 40-67, col.11, lines 5-67).

19. With respect to claim 4, McGill in view of Sugar teaches the radio transceiver suspends radar detection processing whenever a total number of pulses within the table is less than a specified number (Sugar, Abstract, (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 67) (fig.11, Fig.12, Fig.6, col.10, lines 40-67, col.11, lines 5-67).

20. With respect to claim 5, McGill in view of Sugar teaches the specified number is equal to six ((Sugar, Abstract, (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 67) (fig.11, Fig.12, Fig.6, col.10, lines 40-67, col.11, lines 5-67).

21. With respect to claim 6, McGill in view of Sugar teaches the radio transceiver resumes processing whenever the total number of pulses is greater than or equal to the specified number ((Sugar, Abstract, (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 67) (fig.11, Fig.12, Fig.6, col.10, lines 40-67, col.11, lines 5-67).

22. With respect to claim 7, McGill in view of Sugar teaches the radar detection circuit measures signal magnitude crossings of a plurality of thresholds and determines a rise time from a first to a second threshold, time above the second threshold, and a fall time from the second to the first threshold ((Sugar, Abstract, (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 67) (fig.11, Fig.12, Fig.6, col.10, lines 40-67, col.11, lines 5-67).

23. With respect to claim 8, McGill in view of Sugar teaches the radar detection circuit monitors at least one of a magnitude, a pulse width and timing and timing relationships of received pulses to determine whether a radar signal has been received ((Sugar, Abstract, (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 67) (fig.11, Fig.12, Fig.6, col.10, lines 40-67, col.11, lines 5-67).

24. With respect to claim 9, McGill in view of Sugar teaches the radar detection circuit comprises a state machine (signal detector) for determining whether the received signal has specified characteristics of a radar signal (Abstract, col.12, lines 10-67, col.13, lines 1-67, col.14, lines 1-35, col.21, lines 45-60) [the sage 10 is used to classify

and identify signals in a frequency band for radar systems] (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 67) (fig.11, Fig.12, Fig.6, col.10, lines 40-67, col.11, lines 5-67).

25. With respect to claim 10, McGill in view of Sugar teaches the radar detection circuit produces a control signal that is set to a specified logic state whenever the radar signal has been detected (Abstract, col.12, lines 10-67, col.13, lines 1-67, col.14, lines 1-35, col.21, lines 45-60) [the sage 10 is used to classify and identify signals in a frequency band for radar systems] (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 67) (fig.11, Fig.12, Fig.6, col.10, lines 40-67, col.11, lines 5-67).

26. Claims 11-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over McGill (US 5,017,921) in view of Sugar et al (US 6,714,605 B2) and further in view of McFarland (US 2003/0107512 A1).

McGill teaches radio from end for receiving, amplifying and down converting and filtering a radio frequency (RF) signal to produce a low frequency received signal; analog to digital converter operatively coupled to receive the low frequency received signal, the ADC producing a digital low frequency signal; baseband processor coupled to receive and process the digital low frequency signal (Fig.1)

However, McGill fails to teach radar detection circuit coupled to receive the digital low frequency signal, wherein the radar detection circuit further includes:

27. multiplication circuitry for receiving and squaring the digital low frequency signal; moving average filter selectively coupled to receive an output signal produced by the multiplication circuitry, the moving average filter producing a moving average filtered

signal; first conversion block for converting a magnitude of the moving average filtered signal into decibel values; and a threshold comparison state machine coupled to receive an output of the first conversion block in decibel values, wherein the threshold machine measures rise time, fall time, and magnitude levels of the output of the first conversion block and detects a received radar pulse pattern and produces a corresponding control signal indicating whether a radar signal has been detected to the baseband processor; and wherein the processor is coupled to and receives rise time, fall time, and magnitude levels of received signals from the threshold comparison state machine, and wherein the processor determines whether the radar signal has been received and wherein wherein the radar detection circuit: detects incoming pulses and produces pulse data to a FIFO; generates a table of pulse data for a series of pulses; evaluates the pulse data within the table to remove pulse data that does not satisfy radar pulse characteristics; groups a plurality of pulse data within the table into groups of a specified size; performs radar detection processing; and wherein the radar detection circuit counts and determines a number of most common pulse interval values and determines a radar pulse is present if the number of most common pulse interval values is greater than or equal to a specified number which is taught in the same field of endeavor by Sugar ((Abstract, col.12, lines 10-67, col.13, lines 1-67, col.14, lines 1-35, col.21, lines 45-60, fig.4, col.6, lines 20-35) [the sage 10 is used to classify and identify signals in a frequency band for radar systems] (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 67) (fig.11, Fig.12, Fig.6, col.10, lines 40-67, col.11, lines 5-67) [the moving average filter is the low pass filter since it typically averages a samples of inputs

producing an output that removes high frequency components and the dB conversion block (150) and the signal detector is the threshold state machine] (See Fig.4).

28. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of McGill (the wireless communication device) to incorporate the spectrum analyzer that contains the signal detector and peak detector as taught by Sugar so as to write a pulse event entry into a pulse event list if the pulse duration exceeds a pulse duration threshold value. Otherwise the pulse event entry is discarded.

29. Also, McGill in view of Sugar fails to teach if the radar signal has been received and if so inhibits transmissions on overlapping frequency bands which is taught in analogous art by McFarland (US 2003/0107512 A1).

30. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify McGill in view of Sugar with the radar detection system that detects interfering radar signals as taught by McFarland so as to avoid transmitting when interfering radar signals are present.

31. With respect to claim 12, McGill in view of Sugar and McFarland further teaches the radar detection circuit examines pulse data within the table of pulse data to determine a radar signal is present with a missing pulse ((Sugar, Abstract, (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 67) (fig.11, Fig.12, Fig.6, col.10, lines 40-67, col.11, lines 5-67).

32. With respect to claim 13, McGill in view of Sugar and McFarland further teaches the radar detection circuit examines pulse data within the table of pulse data to

determine a radar is present with an extra pulse ((Sugar, Abstract, (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 67) (fig.11, Fig.12, Fig.6, col.10, lines 40-67, col.11, lines 5-67).

33. With respect to claim 14, McGill in view of Sugar and McFarland further teaches the radio transceiver suspends transmission in overlapping frequencies (McFarland, (See Fig.1, par [0017-0018], par [0020-0022]).

34. With respect to claim 15, McGill in view of Sugar and McFarland further teaches the radio transceiver classifies the detected radar signal by comparing frequencies of pulses to known radar signals (((Sugar, Abstract, (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 67) (fig.11, Fig.12, Fig.6, col.10, lines 40-67, col.11, lines 5-67).

35. With respect to claim 16, McGill in view of Sugar and McFarland further teaches the radar detection circuit continues to monitor for radar and once a radar signal is determined to not be present, resumes transmission in overlapping frequency bands (See Fig.1, par [0017-0018], par [0020-0022]).

With respect to claim 17, McGill teaches radio from end for receiving, amplifying and down converting and filtering a radio frequency (RF) signal to produce a low frequency received signal; analog to digital converter operatively coupled to receive the low frequency received signal, the ADC producing a digital low frequency signal; baseband processor coupled to receive and process the digital low frequency signal (Fig.2).

However, fails to teach radar detection circuit coupled to receive the digital low frequency signal, wherein the radar detection circuit further includes a threshold comparison state machine for measuring rise time, fall time, and magnitude levels of received signals; wherein the radar detection circuit: detects incoming pulses and produces pulse data to a FIFO generates a table of pulse data for a series of pulses; evaluates the pulse data within the table to remove pulse data that does not satisfy radar pulse characteristics; groups a plurality of pulse data within the table into groups of a specified size; wherein the radar detection circuit counts and determines a number of most common pulse interval values and determines a radar pulse is present if the number of most common pulse interval values is greater than or equal to a specified number; and wherein the baseband processor is coupled to and receives rise time, fall time, and

magnitude levels of received signals from the threshold comparison state machine ((Abstract, col.12, lines 10-67, col.13, lines 1-67, col.14, lines 1-35, col.21, lines 45-60, fig.4, col.6, lines 20-35) [the sage 10 is used to classify and identify signals in a frequency band for radar systems] (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 67) (fig.11, Fig.12, Fig.6, col.10, lines 40-67, col.11, lines 5-67).

36. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of McGill (the wireless communication device) to incorporate the spectrum analyzer that contains the signal detector and peak detector as taught by Sugar so as to write a pulse event entry into a pulse event list if

the pulse duration exceeds a pulse duration threshold value. Otherwise the pulse event entry is discarded.

37. Also, McGill in view of Sugar fails to teach if the radar signal has been received and if so inhibits transmissions on overlapping frequency bands which is taught in analogous art by McFarland ((See Fig.1, par [0017-0018], par [0020-0022]).

38. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify McGill in view of Sugar with the radar detection system that detects interfering radar signals as taught by McFarland so as to avoid transmitting when interfering radar signals are present.

39. With respect to claim 18, McGill in view of Sugar and McFarland wherein the radar detection circuit examines pulse data within the table of pulse data to determine a radar is present with a missing pulse. ((Sugar, Abstract, (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 67) (fig.11, Fig.12, Fig.6, col.10, lines 40-67, col.11, lines 5-67).

40. With respect to claim 19, McGill in view of Sugar and McFarland further teaches wherein the radar detection circuit counts and determines a number of most common and second most common pulse interval values and determines a radar pulse is present if the number of most common pulse interval values is equal to 2 times the number of the second most common pulse interval values. ((Sugar, Abstract, (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 67) (fig.11, Fig.12, Fig.6, col.10, lines 40-67, col.11, lines 5-67)

41. With respect to claim 20, McGill in view of Sugar and McFarland further teaches wherein the radar detection circuit counts and determines a number of most common and second most common pulse interval values and determines a radar signal is present if2 times the number of most common pulse interval values is equal to the number of the second most common pulse interval values. ((Sugar, Abstract, (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 67) (fig.11, Fig.12, Fig.6, col.10, lines 40-67, col.11, lines 5-67).

42. With respect to claim 21, McGill in view of Sugar and McFarland further teaches the radar detection circuit counts and determines a number of most common and second most common pulse interval values and determines a radar signal is present if the number of most common pulse interval values summed with the number of the second most common pulse interval values is greater than the specified number. ((Sugar, Abstract, (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 67) (fig.11, Fig.12, Fig.6, col.10, lines 40-67, col.11, lines 5-67).

43. With respect to claim 22, McGill in view of Sugar and McFarland teaches wherein the radar detection circuit examines pulse data within the table of pulse data to determine a radar signal is present with an extra pulse. ((Sugar, Abstract, (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 67) (fig.11, Fig.12, Fig.6, col.10, lines 40-67, col.11, lines 5-67).

44. With respect to claim 23, McGill in view of Sugar and McFarland further teaches the grouped plurality of pulse data entries, the radio transceiver generates a second list of pulse repetition intervals by subtracting a start time for a given pulse from a start time

for a pulse preceding an immediately preceding pulse. ((Sugar, Abstract, (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 67) (fig.11, Fig.12, Fig.6, col.10, lines 40-67, col.11, lines 5-67).

45. With respect to claim 24, McGill in view of Sugar and McFarland wherein the radio transceiver compares pulse intervals of the first list of pulse repetition intervals with the second list of pulse repetition intervals. ((Sugar, Abstract, (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 67) (fig.11, Fig.12, Fig.6, col.10, lines 40-67, col.11, lines 5-67).

46. With respect to claim 25, McGill in view of Sugar and McFarland the radio transceiver determines a radar is present if pulse periods match from the comparison, and if the total number of pulses in second list of pulse repetition intervals is greater than a specified number. ((Sugar, Abstract, (col.3, lines 35-45, col.7, lines 5-67, col.8, lines 1-67, col.9, lines 67) (fig.11, Fig.12, Fig.6, col.10, lines 40-67, col.11, lines 5-67).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AMAR DAGLAWI whose telephone number is (571)270-1221. The examiner can normally be reached on Monday- Friday (7:30 AM- 5:00 AM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NGUYEN DUC can be reached on 571-272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Amar Daglawi
Examiner
Art Unit 2618

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